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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,028	08/23/2000	Chris Rygaard	1010722-991101	1587

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EXAMINER	
JACKSON, JENISE E	

ART UNIT	PAPER NUMBER
2131	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/645,028	RYGAARD ET AL.	
	Examiner	Art Unit	
	Jenise E Jackson	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-21 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 12.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-21 rejected under 35 U.S.C. 102(a) as being anticipated by Jansen et al. NIST Special Publication 800-19 – Mobile Agent Security (hereafter Jansen).

1. As per **claims 1, 4, 6, 8, 11,** Jansen teaches a mobile application (MA) security system (title, pg. 2 and section 3.2, bottom paragraph on page 9), comprising; one or more hosts connected to the server computer, each computer executing the mobile application that jumps between the hosts during execution(see pg. 2, pg. 17, section 4.1.4, 4.1.5), central computer for controlling the security of a MA(pg. 18-19 section 4.2 Protecting Agents); the central computer comprising means for monitoring the security of the MA as it jumps between hosts computers wherein the MA is communicated from a first host to a second host(see pg. 18-19 section 4.2 protecting agents), wherein the security monitoring means further comprises means for detecting unwanted changes in the code associated with the MA when the MA is jumping between hosts (see pg. 6-7, section 2.3.4, pg. 10-11, section 3.3).

2. As per **claim 2**, Jansen teaches wherein the detecting means further comprises means for storing a copy of each MA when the MA first passes thorough the server, means for receiving the MA after it is executed by another host, and means for comparing the code of the MA after it is executed by another host, to the stored copy of the MA to determine if changes have been

made to the code of the MA (Section 3.2, 3.3, pgs 9-11, section 4.2.2 Mutual Itinerary Recording teaches tracking and comparing the Itinerary list as it traverses the peers – Since Jansen discloses both central and distributed Central computer (see claim 1 above), this reads on using one stored copy for comparison purposes. Further to this point are the lists/tables, bottom list on page 14 and top list on page 19, which disclose many possible countermeasure means – one skilled in the art would provide for a one-to-one code compare at a minimum).

3. As per **claim 3**, Jansen teaches claim 1 wherein the detecting means further includes means for computing a checksum of the MA when the MA first passes through the server (pg. 19-20, teach Public Key and PRAC which are "cryptographic checksums" and are checked for accuracy. Each reads on "checksum"), means for receiving the MA after it is executed by another host, means for comparing the checksum of the mobile application (page 17, Path Histories teaches adding a signed entry to the path which is used to verify validity of the MA/message) after it is executed by another host to the stored checksum of the mobile application to determine if changes have been made to the code of the mobile application(see section 2.3.4 pg. 6-7, section 3.2, 3.3. pg. 9-12, and pg. 16, Signed Code section teaches digital signature/Authenticode which provides "code signing" to provide means for determining an authentic message or not) .

4. ***With further regard to claim 4***, Jansen teaches security monitoring means comprises preventing a host from transmitting hostile code in a MA to another host (pgs 9-10, section 3.2, pg. 18-19, section 4.2, pg. 19 top paragraph teaches IBM Aglets prevent receiving platform from accepting agents from an agent platform not defined as a trusted peer).

5. As per **claims 5,** wherein preventing means comprises determining if the host dispatching the mobile application is trusted (pages 18-19, Protecting Agents, teaches trusted peers via IBM Aglets and Claim 3 above teaches Signed Code which infers trust), means for saving the code of the MA and means, when requested by another node, for providing the code for the MA to the requesting node (page 13-14, Protecting Agent Platform section – broadly discloses "trusted communications for MA's" which inherently includes requesting of MA and transmission of MA), means for stripping the code from an initially received MA if the host is not trusted(see pgs. 18-19, section 4.2). The Examiner asserts that Jansen teaches stripping code, because Jansen teaches identifying a non-trusted machine (see previous claim rejections) and hence many options exist as to how to stay safe from said machine, i.e. do not communicate with it, only transmit to it, attempt to re-verify that it is a trusted machine, only communicate with certain machines, strip code.

6. ***With further regard to claim 6***, Jansen teaches security monitoring means comprises detecting unwanted changes in the state of the MA (page 17, State Appraisal teaches prevention of state corruption/modification).

7. As per **claim 7**, Jansen teaches claim 6/15 wherein the detecting means further comprises means for saving a copy of the state of a MA received from a node that received the MA, means for receiving data about the same MA after a jump to another node and means for comparing the state of the MA after the jump to another node with the stored state of the MA to ensure that the state of the MA has not changed (page 17, section 4.1.4, 4.1.5).

8. ***With further regard to claim 8***, Jansen teaches security monitoring means comprises detecting unwanted changes to the itinerary of the MA (page 21, Section 4.2.2, pg. 22-23, section 4.2.4).

9. As per **claim 9**, Jansen teaches wherein the detecting means further comprises means for saving a copy of the itinerary of a MA received from a node that received the MA, means for receiving the same MA after a jump to another node and means for comparing the itinerary of the MA after the jump to another node with the stored itinerary of the MA to ensure that the itinerary of the MA has not changed (page 21-22, section 4.2.2, 4.2.3).

10. As per **claim 10,** Jansen teaches claim 8 wherein the itinerary comprises past historical itinerary data (page 17, Path Histories section AND page 21, Mutual Itinerary Recording and Itinerary Recording with Replication/Voting sections).

11. ***With further regard to claim 11***, Jansen teaches receiving data about a mobile application via State Appraisal, Path Histories, Proof Carrying Code (pages 16-18), which provides data about the MA (and reads on the claim).

12. As per **claim 12**, rejected under the same basis as claim 2.

13. With further regard to **claim 13**, see claim 1, 4 and 11 rejections above.

14. As per **claim 14**, it is rejected under the same basis as claim 5.

15. With further regard to **claim 15**, see claim 1, 6 and 11 rejections above.

16. As per **claim 16**, it is rejected under the same basis as per clam 7.

17. With further regard to **claim 17**, see claim 1, 8 and 11 rejections above.

18. As per **claim 18**, it is rejected under the same basis as claim 9.

19. As per **claim 19**, it is rejected under the same basis as per claim 10.

20. With further regard to **claim 20**, see claim 1, 4 and 11 rejections above (note that a non-trusted host launching a MA reads on hostile code, as per claim 4 and is disclosed in Jansen).

21. As per claim 21, limitations have been addressed(see claim 1). Further, Claim 21, Jansen is rejected for the central computer includes means for preventing untrusted hosts from initially launching mobile applications, because Jansen teaches that the mobile applications store checksums associated with them and if the checksum is not valid, one will not be able to execute the application(pg. 19-20).

Response to Amendment

The Applicant states that Jansen does not teach "the central computer further includes means for monitoring the security of the mobile application as it jumps between the host computers wherein when the mobile application is communicated from a first host to a second host, it passes through the central computer" as set forth in the claim. The Examiner disagrees with the Applicant, Jansen teaches that the Jumping beans agent system addressed security issues by implementing a client-server architecture, whereby an agent always returns to a secure central host before moving onto any other platform(see pg. 19).

22. The Applicant states that Jansen does not disclose the security monitoring means for detecting unwanted changes in the code associated with the mobile application when the mobile application is jumping between hosts. The Examiner disagrees since Jansen teaches a central host allowing tampering to be detected and prevented from accepting agents/code from someone not defined as a trusted peer(see pg. 19).

23. The Applicant states that Jansen does not disclose the central computer detects unwanted changes in the code associated with the mobile application when the mobile application is jumping between hosts. The Examiner disagrees since Jansen teaches a secure central host which is interpreted as being capable of providing central security(see pg. 19). Further, Jansen discloses that a digital signature is included into the code, if the digital signature can verified than the agent has not been tampered with, if it cannot be verified that it has been tampered with(see pg. 16, 18).

24. The Applicant states that Jansen does not teach that a central computer stores a copy of a mobile application and then compares it to the mobile application after execution by another host. The Examiner disagrees with the Applicant. Jansen teaches this, because Jansen teaches protecting against modification of code, i.e. comparing the original to the one received and section 4.2.2 Mutual Itinerary Recording teaches tracking and comparing the Itinerary list as it traverses the peers-Since Jansen teaches both central and distributed Central host(see pg. 19), this reads on using one stored copy for comparison purposes.

25. The Applicant states that Jansen does not disclose means for stripping the code from an initially received mobile application if the host is not trusted, means for saving the code when requested by another host, and for providing the code for the mobile application to the requesting

host. The Examiner disagrees with the Applicant. Jansen teaches identifying a non-trusted machine and many options exist as to how to stay safe from the machine. Jansen teaches that one of the options that exist is to only communicate with certain machines, stripping the code(see pg. 13-14).

Jansen teaches that the mobile applications store checksums associated with them and if the checksum is not valid, one will not be able to execute the application(pg. 19-20).

26. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenise E Jackson whose telephone number is (703) 306-0426. The examiner can normally be reached on M-Th (6:00 a.m. - 3:30 p.m.) alternate Friday's.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (703) 305-9648. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 21, 2004

AYAZ SHEIKH
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